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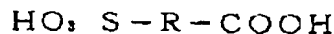
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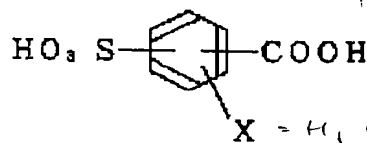
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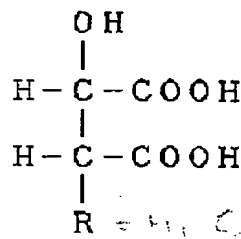
TITLE : TIN-ZINC ALLOY PLATING BATH



*R = C<sub>1</sub>-C<sub>6</sub> alkylene, C<sub>2</sub>-C<sub>6</sub> alkenyl*



*X = H, OH, COOH (ortho)*



*R = H, C<sub>1</sub>-C<sub>2</sub> alkyl*

ABSTRACT : PROBLEM TO BE SOLVED: To obtain a smooth and dense tin-zinc alloy plating film by adding sulfo(hydroxy)carboxylic acid and monohydroxycarboxylic acid as complexing agents into a plating bath contg. bivalent tin ions and bivalent zinc ions and adjusting the pH of this bath.

SOLUTION: One or  $\geq 2$  kinds of the complexing agents selected from the aliphatic sulfo(hydroxy)carboxylic acid expressed by formula I and/or its salt, the aromatic sulfo(hydroxy)carboxylic acid expressed by formula II and/or its salt and the aliphatic monohydroxycarboxylic acid expressed by formula III and/or its salt are incorporated as essential components into the plating bath contg. the bivalent tin ions and the bivalent zinc ions. The pH is adjusted to 2 to 6. In the formula I, R is 1 to 6C alkylene group or 2 to 6C alkenylene group. In the formula II, X is hydrogen, hydroxyl group or carboxyl group. In the formula III, R is hydrogen or 1 to 2C alkyl group. The complexing agents are used at about 2 to 20 times the tin ions and zinc ions in molar ratio.

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